

Amendment and Response  
Applicants: Edgardo Costa Maianti et al.  
Serial No.: 10/805,165

Attorney Docket: DID1047US

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**REMARKS**

**Pending Claims:**

Claims 1 to 10 are pending. Claim 6 has been amended and constitutes no new matter, support for which can be found in the specification and drawings.

**Terminal Disclaimer:**

Claims 1, 2, 4, 5, 6, 7, 9 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 5 of U.S. Patent No. 6,723,283 to Ghelli.

A Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) was filed on November 1, 2006, along with an Amendment and Response to the June 1, 2006 Office Action. A copy of that Terminal Disclaimer is enclosed herewith.

Claims 1 to 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 10 of copending application U.S. Serial No. 10/614,722 to Maianti et al.

A Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) was filed on November 1, 2006, along with an Amendment and Response to the June 1, 2006 Office Action. A copy of that Terminal Disclaimer is enclosed herewith.

**Rejections under 35 U.S.C. § 102:**

Claims 6, 7 and 9 have been rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,770,149 to Raible. Applicants respectfully traverse this rejection of the claims.

Although Applicants disagree with the Examiner, the claims have been amended to clarify the subject matter of the claims. Claim 6 has been amended to recite that the bottom portion of the housing defines the blood pump "including a

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blood pump inlet and a blood pump outlet". Raible does not teach nor suggest a housing that includes a bottom portion defining a blood pump "including a blood pump inlet and a blood pump outlet". Therefore Applicants respectfully request that the rejection of claim 6 be withdrawn. Claims 7 and 9 depend from claim 6 and thus add further limitations to claim 6. Therefore Applicants believe claims 7 and 9 are also allowable and respectfully request that the Examiner withdraw the rejection of claims 7 and 9.

Rejections under 35 U.S.C. § 103:

Claims 1, 2, 4, 5, and 10 have been rejected under 35 U.S.C. § 103(a) as being obvious over Raible in view of U.S. Patent No. 5,039,482 to Panzani et al. (Panzani). Applicants respectfully traverse this rejection of the claims.

With respect to claim 1 the Examiner acknowledges that Raible does not teach the blood inlet being located below the blood outlet to define a blood flow path from a bottom of the heat exchanger to a top of the heat exchanger. However, the Examiner cites Panzani as confirming that it is well known in the art to have a blood inlet located below the blood outlet to define a blood flow path from a bottom of the heat exchanger to a top of the heat exchanger. The Examiner further states that Panzani teaches that this arrangement provides a compact versatile structure and reduces connecting lines to facilitate installation and operation of the device. Therefore, the Examiner concludes that it "would have been obvious to one of ordinary skill in the art at the time of the invention to modify Raible '149 to include a blood inlet located below the blood outlet to define a blood flow path from a bottom of the heat exchanger to a top of the heat exchanger, as taught by Panzani, to provide a compact versatile structure and reduce connecting lines to facilitate installation and operation..." Applicants disagree.

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A person of skill in the art would have no reason to modify Raible in accordance with Panzani. In fact, such a modification is contrary to the express teaching of Raible which states that the "preferred direction of blood flow through the pump/heat exchanger/membrane oxygenator component is top to bottom..." (Col. 2, lines 15 to 17). Further, Raible states that the top to bottom blood flow, which is countercurrent to the bottom to top flow of heat exchange fluid results in optimal heat-exchange efficiency within the system (Col. 6, lines 15 to 18). A person of skill in the art would see no benefit to making a modification to Raible that would result in reducing the efficiency of the system. Clearly Raible teaches away from such a modification. Additionally, a person of skill in the art would have no reason to combine Raible with Panzani to provide a compact structure or to reduce connecting lines as suggested by the Examiner since those objectives are already recognized and achieved by the device proposed in Raible (see, Raible, Col 1, lines 29 to 64). Therefore, Applicants submit that claim 1 is allowable.

Since claims 2, 4 and 5 depend from claim 1 and add further limitations those claims are allowable for at least the same reasons as claim 1. Claim 10 depends from claim 6 which is allowable for the reasons set forth above. Since Panzani does not correct the deficiencies stated above with respect to Raible and since claim 10 adds further limitations to claim 6, Applicants believe that claim 10 is allowable.

Claims 3 and 8 have been rejected under 35 U.S.C. § 103(a) as being obvious over Raible in view of Panzani, and further in view of U.S. Patent No. 5,924,848 to Izraelev. Applicants respectfully traverse this rejection of the claims.

Claim 3 depends from claim 1 and claim 8 depends from currently amended claim 6 which Applicants believe are allowable for at least the reasons stated above. Since Izraelev does not correct the deficiencies stated above with respect to Raible and Panzani and since claim 3 adds further limitations to claim 1

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and claim 8 adds further limitations to claim 6, Applicants believe that claims 3 and 8 are allowable.

### Conclusion

In view of Applicants' amendments and remarks, the claims are believed to be in condition for allowance. Reconsideration, withdrawal of the rejections, and passage of the case to issue is respectfully requested.

If any additional fees are due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 16-2312. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

Date: 5/9/07

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